EQUATIONS FOR THE SIMULATION OF THE ENERGY DIAGRAM OF AUSTRALIA

PREPARED BY PROFESSOR H.T. ODUM. 1993

TYPED BY DR. DAVID M. SCIENCEMAN, 09 DECEMBER 2006.

$$\dot{B} = k_2 R_1 R_2 - k_3 B - k_4 B$$

$$\dot{P} = k_5 B + \frac{k_6 M}{p_5} - k_7 R_1 R_2 PAN - k_8 P$$

$$\dot{G} = k_9 R_3 - L_8 G - L_4 CGFAN$$

$$\dot{A} = \frac{L_7 M}{p_4} + L_8 CGFAN - L_9 R_1 R_2 PAN - n_1 A - n_2 AF - n_3 N$$

$$\dot{N} = N_4 N + N_5 N_0 \left(A - N\right)$$

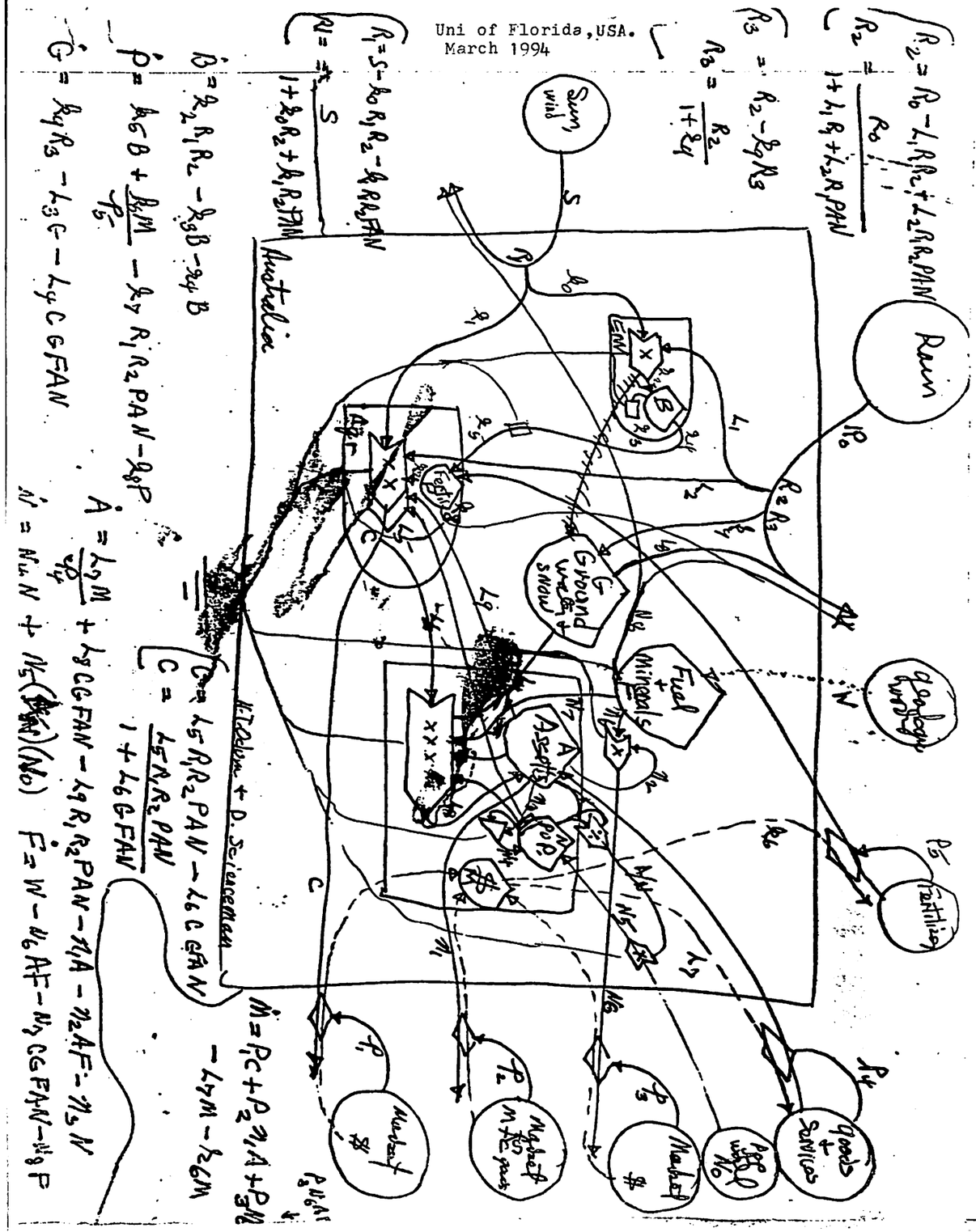
$$\dot{F} = W - N_6 AF - N_7 CGFAN - N_8 F$$

$$\dot{M} = p_1 C + p_2 n_1 A + p_3 N_6 AF - L_7 M - k_6 M$$

$$C = L_5 R_1 R_2 PAN - L_6 CGFAN$$

$$C = \frac{L_5 R_1 R_2 PAN}{1 + L_6 GFAN}$$

$$\begin{cases} R_2 = R_o - L_1 R_1 R_2 + L_2 R_1 R_2 PAN \\ R_2 = \dfrac{R_o}{1 + L_1 R_1 + L_2 R_1 PAN} \end{cases}$$

$$\begin{cases} R_1 = S - k_o R_1 R_2 - k_1 R_1 R_2 PAN \\ R_1 = \dfrac{S}{1 + k_o R_2 + k_1 R_2 PAN} \end{cases}$$

$$\begin{cases} R_3 = R_2 - k_9 R_3 \\ R_3 = \dfrac{R_2}{1 + k_9} \end{cases}$$